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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/807,072	03/23/2004	William C. Egbert	59033US002 (1004-099US01)	2648
32692	7590	08/18/2006	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY PO BOX 33427 ST. PAUL, MN 55133-3427			TWEEL JR, JOHN ALEXANDER	
			ART UNIT	PAPER NUMBER
			2612	

DATE MAILED: 08/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.



## **DETAILED ACTION**

### ***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-35 and 46-50, drawn to electromagnetic antennae with compensating elements, classified in class 340, subclass 572.7.
  - II. Claims 36-45, drawn to RFID systems, classified in class 340, subclass 572.1.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because RFID interrogating systems do not require compensating elements to function properly. The subcombination has separate utility such as security and anti-theft systems.
3. Because these inventions are independent or distinct for the reasons given above and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Melissa Buss on 9/14/06 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-35 and 46-50. Applicant in replying to this Office action must make affirmation of this election. Claims 36-45 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Drawings***

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 12 and 12D. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37

Art Unit: 2612

CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

7. The disclosure is objected to because of the following informalities:
- Paragraph 6, Lines 2-4: Reference numbers are typically not used in the Summary of the invention.
  - Paragraph 30, Line 8: The word "reasonable" should be replaced with --reasonably--.
  - Paragraph 37, Line 7: The word "my" could be replaced with --may--.
  - Paragraph 73, Line 3: It appears that the word "a" is not needed.
- Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2612

9. Claims 1, 4, 6, 10, 13-15, 19, 21, 26-28, and 30 are rejected under 35

U.S.C. 102(e) as being anticipated by **Liu et al** [WO 03/096478] (supplied by applicant).

For claim 1, the compensating element (No. 30 or 50) of Liu has a size for electromagnetic coupling to an inductive loop antenna (No. 40).

For claim 4, Figure 1 of Liu displays a compensating element having a rectilinear shape.

For claim 6, the element of Liu also includes a substrate (No. 20) upon which the loop is disclosed.

For claim 10, the RFID tag taught by Liu includes the following claimed subject matter, 1) the claimed inductive loop antenna is met by the antenna (No. 40) and 2) the claimed compensating element is met by the inner and outer loops (Nos. 50 and 30).

For claim 13, the interior of the chip seen in Liu is designed for RFID circuitry to be placed within.

For claim 14, the compensating element of Liu comprises a closed loop of conductive material.

For claim 15, the closed loops of Liu are rectilinear in shape.

For claim 19, the inner loop (No. 50) of Liu is disposed within an innermost loop of the loop antenna.

For claim 21, the outer loop (No. 30) is disposed outside the loop antenna.

For claim 26, the closed loops seen in Figure 1 has an axis aligned with the axis of the loop antenna.

For claims 27 and 28, the closed loop of Liu is substantially coplanar and proximate to a plane of the inductive antenna.

For claim 30, the compensating closed loops of Liu are physically separate from the loop antenna.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 2, 3, 11, 12, 18, 20, 22-25, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Liu et al.**

For claim 2, as a parasitic current is an inherent property of the closed loop found in Liu, this is not considered a patentable innovation and an obvious property of the conductive closed loop.

For claim 3, die cut metal foils as well as patterned metal foils and conductive metals have been used in circuitry construction for many years. The inclusion of one of these techniques to create the closed loop is an obvious use of the crowded prior art.

For claim 11, the claim is interpreted and rejected for the same reason as claim 2 above.

For claim 12, as interrogating antenna for RFID systems inherently detect RFID tags, even in close proximity of other RFID tags thereto, this is considered an inherent property of RFID systems and therefore not a patentable innovation.

For claim 18, as the parasitic loops of Liu affect the impedance and resonant frequency of the feed loop (No. 40), this is considered electrically connected to the loop antenna.

For claims 20, 22, 24, and 25, the exact location of the loop is a matter best left to the designer or user of the RFID tag to maximize the compensation of the closed loop. As the exact position does not produce a new or unexpected result, this is considered an obvious variation on the prior art.

For claim 23, die cut metal foils as well as patterned metal foils and conductive metals have been used in circuitry construction for many years. The inclusion of one of these techniques to create the closed loop is an obvious use of the crowded prior art.

For claim 31, either closed loop of the Liu reference is electrically "connected" to the feed loop antenna.

12. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Liu et al** in view of **Brady et al** [U.S. 6,285,342].

For claim 5, the element taught by Liu includes the claimed subject matter as discussed in the rejection of claim 1 above. However, the element is not circular in shape.



Loops have been applied to RFID tags in many different shapes and relative sizes. The tag with resonant antenna taught by Brady includes one possible tag having a circular closed loop (No. 428). As this is plain evidence that loops have been applied in circular fashion, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a circular loop for the purpose of taking advantage of a common and well-known loop configuration.

13. Claims 7-9 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Liu et al** in view of **Jesser** [U.S. 7,075,435].

For claim 7, the element taught by Liu includes the claimed subject matter as discussed in the rejection of claim 6 above. However, there is no mention of adhesive disposed on the substrate.

To apply adhesive to an RFID tag substrate is not new in the prior art. The assembly and system taught by Jesser includes an adhesive (Col. 3, Ln. 29-30) to facilitate attachment to a shipping container. As this is a common use for RFID tags, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include an adhesive on the substrate of Liu for the purpose of easy attachment and tracking of a container under surveillance.

For claims 8 and 9, the location of the adhesive is not a patentable innovation, as the function of the element and adhesive are not affected by the presence of said adhesive. This is considered an obvious variation on the prior art.

For claim 29, the Jesser reference mentions several operating frequencies for this system, one being 13.5 MHz.

14. Claims 46-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Liu et al** in view of **Gershenfeld et al** [U.S. 6,724,310].

For claim 46, the RFID tag taught by Liu includes the following claimed subject matter, as noted, 1) the claimed substrate is met by the substrate (No. 20), 2) the claimed inductive loop antenna is met by the antenna (No. 40) and 3) the claimed compensating element is met by the inner and outer loops (Nos. 50 and 30). However, there is no mention of a dielectric spacer positioned between the substrate and a conductive surface.

The wireless monitoring and identification taught by Gershenfeld includes a dielectric spacer (No. 165) so that the wireless tags will be separately detectable, even though a shift in resonance frequency occurs. As this is plain evidence that wireless tags have used dielectric spacers for some time, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a dielectric spacer in the tag found in Liu for the purpose of increasing detectability of said RFID tag.

For claims 47-50, the dielectric constant and thickness of the spacer is not considered a patentable innovation as several different thicknesses and constants may be used depending upon the application of the particular RFID tag. This is considered an obvious variation on the prior art.

Art Unit: 2612

15. Claims 17 and 32-35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

The objected claims present several specific embodiments of the compensating element in relation to the antenna, such as electrical isolation from the antenna or two loops of the inductive loop antenna being electrically connected to a different one other loop of the inductive loop antenna. This is considered unobvious in light of the prior art.

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Reeb** [U.S. 4,694,283] uses a dielectric spacer in a tag-like strip affixable to an article.

**Reeb** [U.S. 5,285,191] uses two conductive paths with a dielectric spacer between.

**Nicholson et al** [U.S. 6,563,425] has at least one continuous passive loop.

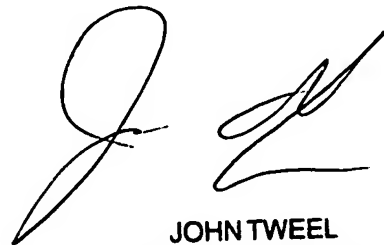
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 571 272 2969. The examiner can normally be reached on M-F 10-6:30.

Art Unit: 2612

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 571 272 2981. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JAT  
8/15/06

A handwritten signature in black ink, appearing to read 'J. Tweel', with a stylized, flowing script.

JOHN TWEEL  
PRIMARY EXAMINER